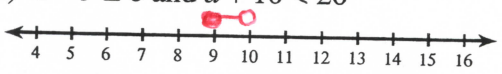
Algebra 1-2 Name ANSWER KEY ID: 1

3.6 Compound Inequalities (AND) day 1

Date_____ Period____

lve each compound inequality and graph its solution.

1) $a - 9 \geq 0$ and $a + 10 < 20$

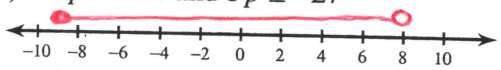


$a-9\geq 0$ AND $a+10<20$

$+9\ +9$ $-10\ -10$

$a \geq 9$ $a < 10$

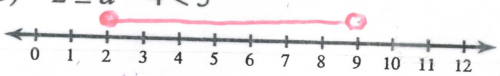
2) $-3p > -24$ and $3p \geq -27$



$\frac{-3p}{-3} > \frac{-24}{-3}$ FLIP IT AND $\frac{3p}{3} \geq \frac{-27}{3}$

$p < 8$ $p \geq -9$

3) $-2 \leq a - 4 < 5$

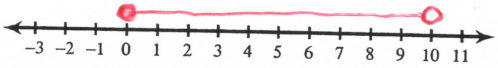


$-2 \leq a-4 < 5$

$+4\ +4\ +4$

$2 \leq a < 9$

4) $r + 2 < 12$ and $\frac{r}{7} \geq 0$

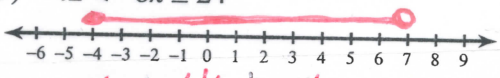


$r+2<12$ AND $7\left(\frac{r}{7}\right) \geq (0)7$

$-2\ -2$

$r < 10$ $r \geq 0$

5) $-42 < -6k \leq 24$

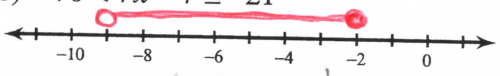


$-42 < -6k \leq 24$

$\frac{-42}{-6} > \frac{-6k}{-6} \geq \frac{24}{-6}$ FLIP BOTH!

$7 > k \geq -4$

6) $-70 < 7x - 7 \leq -21$



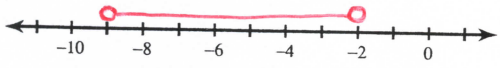
$-70 < 7x-7 \leq -21$

$+7\ +7\ +7$

$\frac{-63}{7} < \frac{7x}{7} \leq \frac{-14}{7}$

$-9 < x \leq -2$

7) $-35 < 4x + 1 < -7$



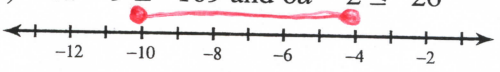
$-35 < 4x+1 < -7$

$-1\ -1\ -1$

$\frac{-36}{4} < \frac{4x}{4} < \frac{-8}{4}$

$-9 < x < -2$

8) $10a - 9 \geq -109$ and $6a - 2 \leq -26$



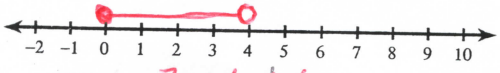
$10a-9 \geq -109$ AND $6a-2 \leq -26$

$+9\ +9$ $+2\ +2$

$\frac{10a}{10} \geq \frac{-100}{10}$ $\frac{6a}{6} \leq \frac{-24}{6}$

$a \geq -10$ $a \leq -4$

9) $-22 < -7a + 6 \leq 6$



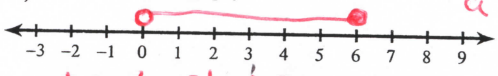
$-22 < -7a+6 \leq 6$

$-6\ -6\ -6$

$\frac{-28}{-7} > \frac{-7a}{-7} \geq \frac{0}{-7}$ FLIP BOTH!

$4 > a \geq 0$

10) $4 < 4 + 5b \leq 34$



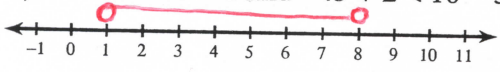
$4 < 4+5b \leq 34$

$-4\ -4\ -4$

$\frac{0}{5} < \frac{5b}{5} \leq \frac{30}{5}$

$0 < b \leq 6$

11) $9b - 2 > 6b + 1$ and $-4b + 2 < 10 - 5b$



$9b-2>6b+1$ and $-4b+2<10-5b$

$-6b\ -6b$ $+5b\ +5b$

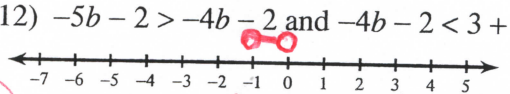
$3b-2 > 1$ $b+2 < 10$

$+2\ +2$ $-2\ -2$

$\frac{3b}{3} > \frac{3}{3}$ $b < 8$

$b > 1$

12) $-5b - 2 > -4b - 2$ and $-4b - 2 < 3 + b$



$-5b-2>-4b-2$ and $-4b-2<3+b$

$+5b\ +5b$ $+4b\ +4b$

$-2 > b-2$ $-2 < 3+5b$

$+2\ +2$ $-3\ -3$

$0 > b$ $\frac{-5}{5} < \frac{5b}{5}$

$-1 < b$